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THE DEVELOPMENT AND TEST OF A SPECIAL PURPOSE FOREIGN LANGUAGE TRAINING CONCEPT.

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THIS ARTICLE TRACES THE ORIGIN AND EVALUATION OF A SPECIAL FOREIGN LANGUAGE TRAINING CONCEPT THAT EVOLVED OUT OF A SPECIFIC MILITARY NEED TO INTERROGATE NEWLY CAPTURED PRISONERS OF WAR TO ACQUIRE IMMEDIATE TACTICAL INFORMATION. THROUGH AN INITIAL FEASIBILITY STUDY, A REASONABLE SET OF VERBAL MATERIALS WAS SELECTED AS COURSE CONTENT, AND A SELF-INSTRUCTIONAL COURSE WAS DESIGNED AND EVALUATED FAVORABLY. FURTHER RESEARCH DEVELOPED OPERATIONAL COURSES IN RUSSIAN AND MANDARIN CHINESE THAT SATISFIED THE MILITARY NEED AND MET THE ADMINISTRATIVE CONSTRAINTS OF THE SYSTEM. THE BULK OF THE ARTICLE CONTAINS DISCUSSIONS OF THE TRAINING CONCEPT, THE RESEARCH PROCEDURE, LESSON STRUCTURE, AND SOME IMPLICATIONS FOR A GENERAL FOREIGN LANGUAGE TRAINING CONCEPT AND METHODOLOGY. THIS ARTICLE APPEARED IN THE "INTERNATIONAL REVIEW OF APPLIED LINGUISTICS IN LANGUAGE TEACHING," VOLUME 5, NUMBER 1, MARCH 1967, PAGES 27-36. (AB)

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THE DEVELOPMENT AND TEST OF A SPECIAL PURPOSE FOREIGN LANGUAGE TRAINING CONCEPT

Eugene H. Rocklyn [1])

L'article trace la genèse et l'évaluation de cours de langues à but très limité et très spécifique. En l'occurence, il s'agissait de programmes autodidactes de chinois mandarin et de russe suffisants pour une interrogation rudimentaire de prisonniers de guerre éventuels par des membres de l'armée américaine.

Le choix du contenu des programmes fut déterminé par des méthodes tout à fait empiriques. La structure des cours comportait trois sections ou l'élève apprenait successivement à

- comprendre les questions et ordres en traduisant la langue étrangère en anglais.
- formuler questions et ordres en traduisant de l'anglais en langue étrangère.
- pratiquer en posant les questions et comprendre les réponses en traduisant en anglais.

Une série de leçons de révision formait une quatrième section. Le cours de chinois comportait en outre une cinquième section affectée à la discrimination et production des tons. La leçon principale à tirer des travaux de l'auteur est la nécessité de créer des programmes réalistes, c'est-à-dire qui correspondent le plus exactement possible aux situations véritables où la langue étudiée sera effectivement utilisée.

Der Artikel beschreibt die Entstehung und Auswertung von Sprachkursen mit sehr begrenztem und spezifischem Ziel. Im vorliegenden Fall handelt es sich um autodidaktische Programme von Mandarin Chinesisch und Russisch, die für ein einfaches Verhör möglicher Kriegsgefangener durch Angehörige der amerikanischen Armee ausreichen.

Die Wahl des Inhalts der Programme wurde von rein empirischen Methoden bestimmt. Die Kurse enthielten drei Teile, in denen der Schüler nacheinander lernte

- durch Übersetzen aus der Fremdsprache ins Englische Fragen und Befehle zu verstehen.
- durch Übersetzen des Englischen in die Fremdsprache Fragen und Befehle zu formulieren.
- durch Fragen stellen und Verstehen der Antworten, die er ins Englische übersetzt, sich zu üben.

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[1]) The research reported here was conducted by the author while employed at the Human Resources Research Office of the George Washington University, which operates under contract with the Department of the Army

Dr. Catherine Garvey, now at the Center for Applied Linguistics, constructed and tested the Chinese version of this special-purpose language training concept and further contributed by reviewing this paper.

The opinions and conclusions given are those of the author and do not necessarily represent views of Dr. Garvey, the Research Office, the University or The Department of the Army.

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Eine Anzahl von Wiederholungslektionen bildete einen vierten Teil. Der Chinesischkurs enthielt darüber hinaus einen fünften Teil für die Unterscheidung und Bildung von Tönen.

Die wichtigste Erkenntnis, die aus den Arbeiten des Vf. gewonnen werden kann, ist die Notwendigkeit, wirklichkeitsgetreue Programme aufzubauen, d. h. solche, die der tatsächlichen Situation, in der die Fremdsprache schließlich gebraucht wird, möglichst genau entsprechen.

INTRODUCTION

This article traces the origin and evaluation of a special foreign language training concept. It shows how the concept evolved out of a specific military communication problem, how linguistic and psychological learning principles were applied to fit this training concept, and how this training concept and methods derived from it were used to produce a specific communication capability that could resolve the problem. Some general implications for foreign language training and methodology are briefly discussed.

The problem concerns interrogation of prisoners of war (POWs). The immediate acquisition of perishable information from a newly captured POW may aid the combat soldier in carrying out his mission and in averting injury to himself and his fellow soldiers. Unfortunately, he usually cannot speak or understand enough of the enemy language to question his captive. As a result this information is not readily available to the soldier who needs it most and who is in the best position to obtain it.

Previous systematic attempts to solve the problem have been frustrated by administrative factors, stemming mainly from the size of the potential student body, which consists of all combat personnel who could be in a position to capture a prisoner of war. These factors are:

1. scarcity and cost of language instructors.
2. length of student-training time in acquiring necessary language skills.
3. number and cost of schools and classrooms.
4. difficulty of integrating language training with ongoing military training.
5. lack of effective language-training procedures for students of below-average aptitude.
6. cost of language-training equipment.
7. need for acquisition of language skills in more than one language.
8. need for effective retention or maintenance of acquired language skills.
9. adherence to minimal weight requirements of the combat equipment load.

This formidable set of constraints was somewhat offset by an analysis of the military situation, which revealed several unique factors in the potential combat communication interchange.

The combat situation:

1. provides extreme coercive control over the native speaker (POW).

2. sharply delimits the topic of interrogation to perishable, low-level tactical information.
3. delimits the captor's utterance categories to the shortest and least complicated commands and questions.
4. permits the repetitive use of a limited and almost identical series of questions for getting information about the subtopics of interrogation.
5. permits the forced repetition of the POW's answers to the captor's questions.
6. permits exploitation of the environment in terms of:
   a) visual contact with many of the subtopics in question.
   b) maximal use of gestures by either or both speakers.
   c) possibility of validating the POW's answers and/or the captor's understanding of those answers by direct action in the combat area.
7. minimizes further the need for phonological and grammatical correctness in the captor's utterances because of:
   a) high probability that the POW would expect to be interrogated and interrogated about the specific topic of tactical information.
   b) repetitive use of identical questions on any one subtopic and between subtopics.
   c) use of only simple and direct commands and questions by the captor.

Given this total system, it was deemed possible to develop a foreign-language training concept and method that could meet both the combat and the administrative needs of the military. To this end an initial study was conducted to analyze the entire system in which the problem appeared in order to develop a training concept based on the significant factors in the system, to devise an audio-lingual training method that would fit this concept, and to test it for feasibility.

Since this was a feasibility study, an arbitrary but reasonable set of verbal materials was selected from the relevant military literature and used as course content in developing the training method. A self-instructional course embodying the training concept was designed and evaluated with favorable results. This study has been described in detail elsewhere.[2])

Further research was undertaken to develop an operational Russian course containing empirically derived content and a similar course in Mandarin Chinese to demonstrate the generalizability of the training concept and its methodology. This research has been reported in detail elsewhere,[3,4]) but a brief description of

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[2]) Rocklyn, E. H., Moren, R. I. and Zinovieff, A. "Development and evaluation of training methods for the rapid acquisition of language skills." HumRRO Research Report 9. January 1962.

[3]) Rocklyn, E. J. "A self-instructional tactical language course in Russian," HumRRO Technical Report 65–14, December 1965.

[4]) Garvey, C. and Rocklyn, E. H., "Development and evaluation of a tactical Mandarin Chinese language course," HumRRO Technical Report 65–15, December 1965.

it covering both the Russian and the Chinese courses will show how, in conjunction with the feasibility study, the training concept was evolved, how training procedures were devised to fit this concept and how the concept and training procedures were evaluated.

THE TRAINING CONCEPT

The special foreign-language training concept evolving from the system analysis sketched in the Introduction can be described in a few paragraphs.

This training concept is predicated on a coercive interrogation situation aimed at one topic: the acquisition of tactical combat information in an environment of which that topic is an integral part. Knowledge about that topic and some degree of willingness to impart it are prime assumptions regarding the role of the POW in this situation.

Gross inadequacies of both pronunciation and grammatical structure are permissible in the speech of the interrogator, by virtue of the coerciveness, the single topic, and an environment which aids information transmission. For the same reasons, other higher-level aspects of the linguistic content, such as the connotative range of the lexicon, stylistic features or alternative constructions could be largely ignored.

In turn, then, these gross foreign language objectives permit the design of a teaching program that should satisfy the military need as well as meet the administrative constraints of the system.

THE RESEARCH PROCEDURE

A. Selection of Course Content

A questionnaire was constructed to determine which commands and questions would most probably be used in combat interrogation. It was administered to (1) soldiers who had asked or who had been in a position to ask newly captured POW's for low level tactical information; and (2) individuals who, by their work, experience or judgement were best in a position to predict which questions and commands were most likely to be used in combat interrogations in the foreseeable future.

A group of 136 officers and enlisted men at the USA Infantry, Armor, Artillery and Engineering Schools who had captured a POW or who had had combat experience first answered the questionnaire. Their answers were analyzed and the specific course content selected was chosen for maximum potential utility in a variety of tactical situations. The basic criterion in making this choice was formulated as a question: Does the item of content under consideration pertain to perishable information in a specific combat situation?

A second group, consisting of four Russian experts provided by the military, not only provided questionnaire data themselves but also critically reviewed the results of the questionnaire analysis of the larger group.

The vocabulary and phrasing of the answers to the chosen questions were then obtained from various sources, including native Russians on the research staff, intelligence experts in language, education, equipment, doctrine and tactics, and a sampling of native Russians, who answered selected questions at the Russian Foreign Area Specialist Training School. The content collected from all these sources was then checked for relevance, importance and completeness by the same experts and by certain staff and faculty members of the Specialist Training School.

The content for the Chinese course was also based on the results of the questionnaire analysis and adapted to the special features of the Chinese area by review of military area documents and by consultation with Chinese area and intelligence experts. These same experts assisted in determining the current Communist Chinese military terminology likely to be used by captured Communist Chinese personnel.

The final English translation of the foreign course content consisted of 11 commands such as "Drop weapon," "Come here," "Speak slowly" and "Repeat answer;" 6 question frames such as "Have you there?" "how many?" and "where?"; 56 inserts such as "men," "tanks" and "guns", along with 56 of the most probable answers to these questions. The answers were, of course, perfect from a phonological and grammatical standpoint and reflected current and common native usage. These answers were short, direct and included such general words as "yes", "no," the cardinal and ordinal numbers, compass headings, and so forth, plus the necessary connectives.

The English translation of this course content was of a special pedagogic nature in that the word order approximated the word order of the foreign-language sentence structure and each translation contained approximately the same number of words as the foreign equivalent.

This content was then used in constructing operational courses in Russian and Chinese in accord with the procedures laid down in the feasibility study.

B. Design of Training Procedures for Operational Courses:

1. Course Structure

The course was divided into three sections in which the students learned to:

a) understand the questions and commands by translating the foreign language into English.
b) speak the questions and commands by translating the English into the foreign language.
c) practice asking the questions and learning to understand the related answers by translating the foreign language into English.

A fourth section or group of lessons consisted of 8 Review-Preview lessons whose purpose, used individually, was to provide the student at the beginning of each daily session with a concise resumé of material previously learned and material to be learned. Taken as a group, these 8 lessons formed a compact and complete summary of the course, which could be used for ready reference and review during and after training.

Unique to the Chinese course was a fifth section, consisting of three tone-discrimination and two tone-production lessons. In all the sections, the items in each lesson were numbered in the native language in order to maximize student practice on learning numbers.

This basic course structure illustrates the conversion of psychological and linguistic principles into actual practice. For example, the abc-sequence of course sections is a graduated approach to actual task performance. In this way two psychological learning principles are satisfied -- graduated difficulty and task fidelity of the training procedures. A widely-discussed linguistic principle is also followed by having the students learn to understand the foreign language material before they learn to speak it.

The use of review-preview lessons, individually or as a group, combines practical considerations with obvious principles of the two disciplines.

Motivational principles were exploited by dividing the course into meaningful goals, i.e., the three sections, and with mastery of the first section well within student capability almost regardless of aptitude. The major factor contributing to such mastery was the use of English as response material. Boredom resulting from necessary repetition was minimized by using the same material in the different sections for different purposes.

Another major principle, that of the meaningfulness of every utterance, was used to promote greater efficiency in learning and retaining these verbal materials.

Empirical test was used to determine if application of these principles held up in practice. For example, the sub-sequence of teaching commands before questions was first tried as directly simulating actual job performance. However, student performance in the feasibility study showed that as long as meaningfulness of utterance was held inviolate, learning commands before questions proved difficult to the point of student rejection. Reversing the sub-sequence, i.e., teaching all of the questions before the commands, which was possible because the commands formed a small and separate subgroup of lessons, brought about a quicker and easier mastery of questions and commands. Whatever the explanation, the import of this example is that actual test should, in the final analysis, dictate the use or modification of training principles.

LESSON STRUCTURE

The principle of graduated difficulty was used as a guide in grouping the material of each section into lessons. Graduated difficulty for the Russian was

achieved by sequencing material on the basis of amount or length of utterance and similarity of English to the Russian. For the Chinese, graduated difficulty was achieved primarily by length of utterance, quantified by counting the number of phonemic tones per utterance as a more accurate indicator of learning difficulty than the number of words in an utterance. Each lesson deals with practice on a specific group of items. (An "item" is a command, question, or answer, or any part of them that serves as a unit of practice.) The basic programming procedure for these items was derived from the method of paired associates. Essentially, this consists of presenting a stimuli, leaving a response interval during which the student can make a response, and then presenting the correct response as confirmation or correction.

The items of each lesson were programmed in accordance with the principles of (a) decreasing assistance, or cue dropout and (b) varied repetition, with gradual introduction of new material along with repetition of the old. Cue dropout was accomplished by constructing each lesson in the form of five lists, each list containing the same material to be learned, but presented in a different order and with progressively fewer cues. In the first or direct-cue list, each answer or response is given as a prompt to the student. In the second and third list, fewer cues are presented to aid the student, while in the fourth and fifth lists very few and finally no cues at all are furnished the student.

Varied repetition was attained by presenting identical items two or more times in a list and by presenting identical parts of items two or more times in a list along with the introduction of new material. Thus, different question frames could be combined with different inserts to form all probable question alternatives. This provides a type of multiple-substitution drill which not only allows for the construction of a large number of questions from a small inventory of frames and inserts, but also provides practice on the variants, the occurrence of which is dependent on the phonological context.

The criterion of mastery was one completely correct translation of every item on five consecutive lists of a lesson. This procedure illustrates an application of the principle of "individual student differences", in that brighter or more apt students can master the lessons with fewer repetitions than the less capable ones. It also insured overlearning for those items in a lesson which were mastered first.

C. Recording the Lessons on Master Tapes

All lessons in the first two sections were recorded by the same native speaker, who also recorded the English content in these lessons. He recorded as well the questions of the third section, with two or three different native speakers recording the answers. Since the student had to contend with speech variations in only one model, this procedure made learning to speak easier. Exposure to a variety of speakers in learning to understand the answers, while more difficult, was deemed imperative since it more closely simulated job performance conditions.

D. Course Equipment

There were four categories of course equipment which made up a training package that could be sent to any suitable location.

1. Recorders. The tape recorders were standard (portable) dual-track language-teaching recorders modified to handle a cartridge instead of the usual tape-reels. A pair of earphones and a microphone attached to a flexible stand were used with these recorders.

2. Taped Course Material. The master tapes were duplicated and put into cartridges to make complete sets of course materials. A Russian set consisted of 40 lesson cartridges, 8 review lessons and 4 test tapes. A Chinese set contained 41 lesson cartridges, 8 review-preview lessons, 5 tone lessons and 4 test tapes. These sets covered about 13 hours of tape time.

3. Printed Course Materials. A combined instruction and score sheet, called a lesson panel, was prepared for every lesson in the course. On one side the instruction sheet described the individual lesson and how to take it. On the other side was printed a response-scoring layout appropriate to that lesson. The student scored his every response.

General instructions and study aids were prepared so that the student could begin and finish the course completely on his own.

4. Scoring Materials. A legal-sized clipboard covered with corrugated cardboard was used to hold the score sheets. Students used a metal stylus to punch their score sheets. For operational use, only a pencil or pen would be necessary.

E. Evaluation of the Courses

Students, with one exception, were non-college males of about average general aptitude but falling into one of three language-aptitude groupings—high, medium and low. They were paid $ 1.50 per hour while taking the course. Thirteen took the Russian and six took the Chinese course.

1. Tests. After they had finished the courses they were given two major tests: a final test of all the course material, and a simulated job performance test, during which they questioned a native Russian or Chinese in an attempt to get tactical combat information.

On the final test of speaking and understanding the course material the scores for Russian ranged from 78 % to 98 %, with a mean of 93 % correct. The scores for Chinese ranged from 55 % to 98 %, with a mean of 84 % correct.

On the simulated interrogation tests, which lasted about 30 minutes, the scores of correctly translated answers to tactical questions ranged, for Russian, from 78 % to 96 %, with a mean of 89 % correct; for Chinese they ranged from 59 % to 100 %, with a mean of 84 % correct. [3])

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[3]) One student of Chinese did not take this test because his final test score was not considered sufficiently favorable to warrant conducting a face-to-face interview of a native Chinese.

The students of Chinese were given an additional test that measured their ability to produce new Chinese sentences composed of unpracticed combinations of words. Scores on this test ranged from 34% to 87% with a mean of 69% correct, indicating some ability to produce intelligible, unrehearsed utterances appropriate to the task objectives.

2. Time and Cost. Learning time for the courses averaged about 66 hours for Russian and 72 hours for Chinese. The training equipment proved to be extremely reliable. With printed materials replaced, the course package was reuseable, by actual test, for at least 15 course administrations, so that training costs per man were estimated to be quite acceptable.

SOME IMPLICATIONS FOR A GENERAL FOREIGN-LANGUAGE TRAINING CONCEPT AND METHODOLOGY

The first point to be made is a caution against overgeneralization of this special training concept and its programming procedures. The educator or trainer may be tempted to imitate directly such short programmed courses in the hope of achieving similar rapid learning and useful capability for communication in a foreign language.

In a more general situation involving a range of utterances on varied topics, many of which may not be present in the immediate surroundings and with no coercive control over the native speaker, short courses of the sort described will most probably not be useful enough to warrant the time and effort involved.

Although direct application to courses aimed at general language training is not recommended, this research, especially the scaling-down of the learning corpus, contains conceptual and methodological implications for foreign language training in general. One such implication concerns the fidelity of the training course to the actual performance situation, the principle which was so clearly embodied in these special courses. Similar fidelity to the principle of a *restricted* and *realistic* learning corpus would undoubtedly contribute to the efficiency of learning and performance in the general case, especially if other desiderata, such as graduated difficulty of material and meaningful behavioral goals, were considered concurrently.

These considerations suggest the necessity of developing a general foreign-language training concept that permits fidelity to realistic communication situations even during training, without violating accepted learning principles. Such a concept will evolve from new and imaginative analyses of communication needs. While not necessarily new or imaginative, one approach, for example, might start with a list of typical situations and their behavioristic consequences:

Buying something — Is the purchase made?
Asking directions — Is the correct information obtained?

One would then construct a set of skeleton dialogues on specific examples from these categories. The student would learn first to understand each dialogue in its entirety and then to respond to the native-informant stimulus in each, using

only the target language. Thus the training situation would gradually simulate actual communication between the student and a native speaker without violating the linguistic principle of using non-translation procedures in learning to speak the foreign language.

A second and third cycle would find the same skeleton dialogues progressively fleshed out with linguistically selected materials. Ensuing cycles would finally be of such complexity that the linguistic content of the specific dialogues would begin to overlap. The advantage of such a programming procedure is apparent: it assures a firm behavioral base, graduated difficulty, graduated introduction of new material, innocuous review of old material, meaningful learning goals, and the possibility of using specific test elements with behavioristic consequences for an actual performance test.

Another feature to stress is the need for actual performance tests in evaluating any language training method, at least initially. Our research showed that scores on such job-performance tests tend to be consistently lower than those obtained by the same students on standard or conventional end-of-course tests.

This is not to say that conventional academic tests should be eliminated but that they should be viewed merely as a preliminary hurdle, whether or not a job-performance test is administered after initial evaluation of the method. Established job-performance test standards would answer the question: When should a student be required to repeat a course because he got a mediocre score on a conventional end-of-course test?

Another implication of this research is that a valid test of the effectiveness of a training method for a normal population cannot be made if only subjects of high aptitude are used. High-aptitude students should be included as a part—but only a small part—of an evaluation group, in order to determine the negative effects, if any, of training procedures designed primarily for students of average aptitude.

Finally, the prospects of devising new and more effective foreign-language training procedures are being improved through the growing emphasis on self-instructional courses. Perhaps the most beneficial aspect in this trend is the necessity it imposes on the course constructor to face up to and find solutions for training problems that were ignored, inadequately handled, or not even recognized when courses were taught by human instructors. Before, the course constructor could shuffle part of his responsibilities onto the instructor, who willy-nilly was obliged to share in the task of devising solutions of some sort for the innumerable training problems not considered or treated in the course itself. Now, with programmed instruction, the course creator is confronted with his full obligations.

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